



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,890	08/11/2006	Raymond Brian Brosseuk	00878.0051USWO	6847
23552	7590	07/07/2009	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			KUMAR, KALYANAVENKA K	
ART UNIT		PAPER NUMBER		
3653				
MAIL DATE		DELIVERY MODE		
07/07/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/551,890	BROSSEUK ET AL.
	<b>Examiner</b> KALYANAVENKATESHWARE KUMAR	Art Unit 3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 15 April 2009.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 23-35 and 37-46 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 23-35 and 37-46 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
  - 1) Certified copies of the priority documents have been received.
  - 2) Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/15/2009 has been entered.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 42 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claims 42 and 43 recites the limitation "the rib or groove" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 23-34 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter to qualify as a § 101 statutory process, the claim should recite the other statutory class (the thing or product) to which it is sufficiently tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.
7. Here, applicant's method steps are not sufficiently tied to another statutory class and can be performed without the use of a particular apparatus.

#### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
9. Claims 23-35 and 37-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Blake (US 964,083)** in view of **Rohr et al. ("Rohr") (US 6,059,120), Newman et al. ("Newman") (US 4,962,858)**.
10. Blake (Fig. 1-2) teaches a heavy particle separation apparatus and a method of heavy particle separation, including a tilttable transverse belt (G) concavely shaped in its central area, and including a spiral rib (Fig. 2; p. 1 teaching ripples or spiral grooves)

having any suitable pitch provided on the belt outer surface, the rib being adapted to urge material upwardly along the transverse belt, a material feeder means (chutes L, K) provided above the transverse belt, a water spray system (M) also provided above the transverse belt, a plurality of idler rollers (H), and respective troughs (Fig. 1, near N and near cup behind apparatus) and moving particles transversely to the belt movement (p. 2, lines 36-45), fluidizing the particles so that light particles are scoured off from its upper layer and heavy particles are drawn back toward the upper end of the belt (Id.), providing increased retention time for material on the belt resulting in repetitive and more accurate evaluation of the relative densities of the particles (Id.).

11. Blake as set forth above teaches all that is claimed except for a variable concave profile in the belt and expressly teaching a preliminary separation stage including the steps of adding water to the feed material, scrubbing, size classification and transportation to the primary separation stage and a differential transportation step designed to separate heavy, medium and light particles before introduction to the primary separation stage and a secondary separation stage including a suitable sluice box to separate fine heavy material including retaining or retention modules mounted on a suitable conveyer means and being removable in continuous fashion for collection of heavy particles and varying the rib/groove height or depth. These features, however, are well-known in the sorting arts. For instance, Rohr teaches a preliminary separation stage as claimed (Fig. 1-4, 6, 8 near chute 4; col. 3). Newman teaches a secondary separation stage including retention modules (Fig. 2, near 23). Further, it would be obvious to one with ordinary skill in the art to modify the base reference with these prior

art teachings to arrive at the claimed invention. The rationale for this obviousness determination can be found from an analysis of the prior art teachings. Here, the modification to arrive at the claimed invention would merely involve the substitution/addition of well-known elements with no change in their respective functions (i.e., feeding chute). Moreover, the use of prior art elements according to their functions is a predictable variation that would yield predictable results, and thus cannot be regarded as a non-obvious modification when the modification is already commonly implemented in the prior art. Further, the use of a second separation stage provides the common-sense benefit of a finer separation. Further, the mere adjustment of well known features, such as groove or idler roller height or the profile of the concave belt or pre-classification to a specific size, are regarded as obvious modifications based on the design incentives and/or economic considerations involved in this type of subject matter. Further, the prior art discussed and cited demonstrates the level of sophistication of one with ordinary skill in the art and that these modifications would be well within this skill level. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Blake for the reasons set forth above.

12. Regarding claims 36 and 47, the claims have been canceled.

***Response to Arguments***

13. Applicant's arguments with respect to claims 23-35 and 37-46 have been considered but are moot in view of the new ground(s) of rejection.

14. **Rejections under USC 101 and 112**
15. Regarding rejections under USC 101 and 112, the rejections are withdrawn due to Applicant's amendment. See new rejection above.
16. **Rejections under USC 103**
17. Regarding Applicant's argument, "The Blake reference, in contrast, expressly discloses employing a belt with a series of parallel or substantially parallel grooves running obliquely to the direction of travel of the belt (Blake per 43-46). An apparatus including such grooves does not teach or suggest the single spiral rib of the present invention," the Examiner disagrees. The Examiner asserts that the claims that recite the rib structure state that the spiral formation may be a rib *or* a groove. Therefore, the Blake reference teaches all the limitations of the claims.
18. Regarding Applicant's argument, "Blake, which without more merely teaches a symmetrical cross-sectional belt profile (not variable), suggests that one of ordinary skill would not have considered obvious the advantages posed by the present invention and in particular, the feature and advantages available in having a variable concave belt profile," the Examiner disagrees. As stated in the above rejection, the mere adjustment of well known features, such as groove or idler roller height or the profile of the concave belt or pre-classification to a specific size, are regarded as obvious modifications based on the design incentives and/or economic considerations involved in this type of subject matter.
19. Regarding Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that

the exit points are disposed of at 180 degrees and an asymmetrical cross-sectional belt profile) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

20. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the teaching of variable concave profile in a belt is taught by the rationale that the use of prior art elements according to their functions is a predictable variation that would yield predictable results, and thus cannot be regarded as a non-obvious modification when the modification is already commonly implemented in the prior art. Further, the use of a second separation stage provides the common-sense benefit of a finer separation. Further, the mere adjustment of well known features, such as groove or idler roller height or the profile of the concave belt or pre- classification to a specific size, are regarded as obvious modifications based on the design incentives and/or economic considerations involved in this type of subject matter..

***Conclusion***

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan Kumar whose telephone number is 571-272-8102. The examiner can normally be reached on Mon-Fri 7:00AM-3:30PM.
22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on 571-272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick H. Mackey/  
Supervisory Patent Examiner, Art  
Unit 3653

Kalyan Kumar  
Examiner  
Art Unit 3653